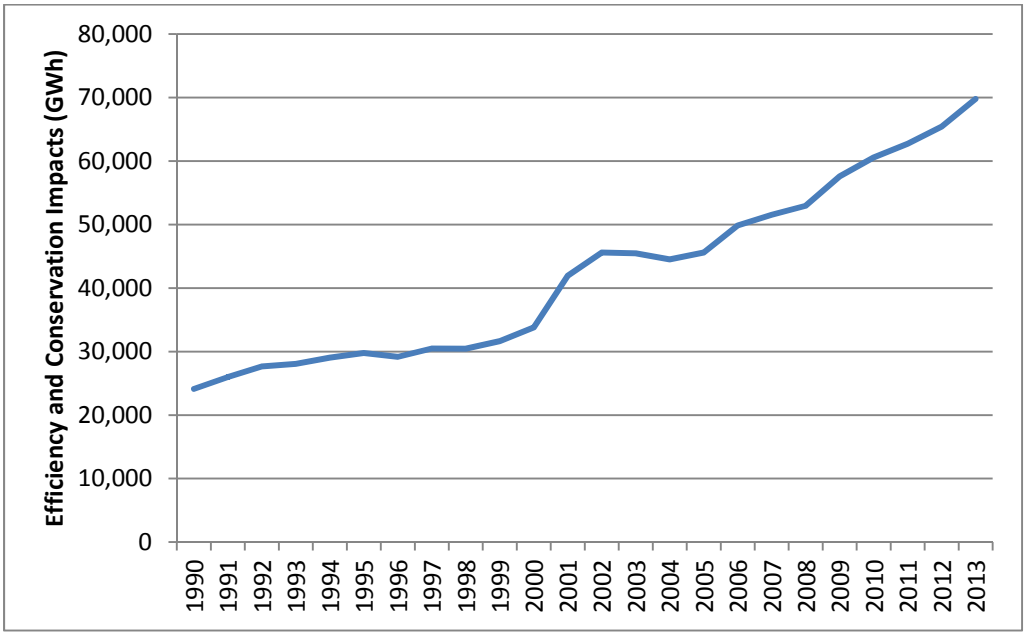
Energy Efficiency

Figure 1 shows total energy savings from efficiency programs, codes and standards, and price and market effects. Savings are estimated to reach nearly 70,000 GWh by 2013. This is relative to conditions in 1975, before California implemented the first efficiency standards.

Figure 1: Statewide Efficiency and Conservation Impacts



Source: California Energy Commission, Demand Analysis Office, based on the California Energy Demand 2014-2024 Revised Forecast, September 2013.

Building and Appliance Standards

Building Standards implemented by the California Energy Commission are following a path toward zero-net-energy new buildings. As part of the background for the 2013 Building Standards, the Energy Commission states:

> "The *2007 Integrated Energy Policy Report* (*IEPR*) established the goal that new building standards achieve "net zero energy" levels by 2020 for residences and by 2030 for commercial buildings. A net zero energy building consumes only as much energy on an annual basis as can be generated with an on-site renewable energy system. The Energy Commission has begun a path toward a tiered approach to achieve zero net energy in future building standards. The base tier will be the traditional mandatory standard that increases in stringency with every code cycle. Additional tiers will be voluntary and represent a "reach" standard for advanced levels of energy efficiency. The intent of the advanced, voluntary tiers is to provide the industry and marketplace with a framework for differentiating highly energy-efficient buildings from standard buildings and to pilot these enhanced features in the field to

see how well they work before determining which of the measures should be included in future mandatory standards."[1]

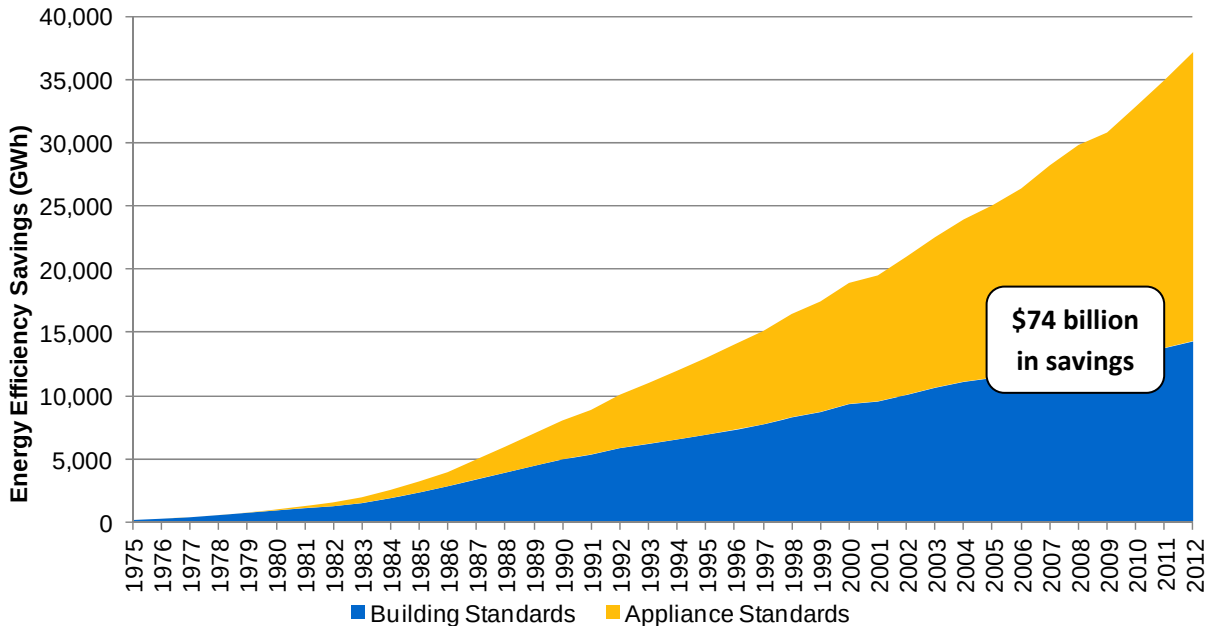
In addition, the Energy Commission's Assembly Bill 758 (Skinner, Chapter 470, Statutes of 2009) proceeding is developing programs to improve energy efficiency of existing buildings (http://www.energy.ca.gov/ab758/). More than half of California's 13 million residential buildings and more than 40 percent of the commercial buildings were built before 1978, when the state first implemented Building Energy Efficiency Standards.[2]

Figure 2 shows estimates of savings from building and appliance standards. Savings from appliance standards have been growing more quickly than savings from building. California approved the nation's first energy efficiency standards for televisions and battery chargers commonly used to power cell phones, laptop computers, power tools, and other devices. The second stage of the television standards became effective on January 1, 2013, and is estimated to reduce the product's energy consumption by 49 percent relative to preregulation baseline. Figure 2 reflects savings for only the first year of compliance with the TV standards. Compliance with the battery charger standards began February 1, 2013, and will reduce waste for these applications by 40 percent. The Energy Commission's energy efficiency standards have saved Californians more than $74 billion in reduced electricity bills since 1975.

1 http://www.energy.ca.gov/title24/2013standards/prerulemaking/background.html.

2 http://www.energy.ca.gov/2011publications/CEC-400-2011-007/CEC-400-2011-007-SD.pdf.

Figure 2: Statewide Codes and Standards Energy Efficiency Savings in California



Source: California Energy Commission, Demand Analysis Office, based on the California Energy Demand 2014-2024 Revised Forecast, September 2013.

Publicly Owned Utilities

Assembly Bill 2021 (Levine, Chapter 734, Statutes of 2006) directs public utilities to "first acquire all available energy efficiency and demand reduction resources that are cost-effective, reliable and feasible." Investor-owned and public utilities are required to treat efficiency as a procurement investment.

Under Senate Bill 1037 (Kehoe, Chapter 366, Statutes of 2005) and AB 2021, publicly owned electric utilities report annual energy efficiency savings and expenditures to the Energy Commission on March 15. Starting in June 2007, the legislation requires public utilities to update their efficiency potential estimates and revise their 10-year targets every three years. Working with the California Public Utilities Commission to obtain investor-owned utilities' potential and goals information, the Energy Commission then establishes a statewide efficiency goal. Most public utilities revised their efficiency potential and goals in 2010. The Energy Commission has not set a new statewide goal, however, because of delays in completing new potential studies by the investor-owned and the larger public utilities.

Table 1 shows the reported energy efficiency savings and adopted efficiency targets compared to retail sales for the 15 publicly owned utilities with the largest retail sales for 2012.

Table 1: 2012 Energy Efficiency Net Reported Savings for Largest 15 Public Utilities as a Percentage of Retail Sales

Publicly Owned Utility	Reported Net Annual Savings (MWh)	Adopted (1st year) Targets (2007) (MWh)	Retail Sales (MWh)	Savings as Percentage of Retail Sales
Redding	345	3,953	770,248	0.04%
Turlock	4,877	21,342	1,945,969	0.25%
Vernon	3,263	0	1,145,130	0.28%
LADWP	89,487	252,000	23,600,916	0.38%
Roseville	5,570	8,716	1,197,824	0.46%
Modesto	12,931	13,856	2,508,099	0.52%
Merced	2,568	3,619	447,836	0.57%
IID	25,305	48,000	3,386,703	0.75%
Burbank	10,952	11,307	1,120,564	0.98%
Riverside	21,244	24,250	2,171,956	0.98%
Anaheim	24,337	16,956	2,437,289	1.00%
Pasadena	13,337	22,627	1,139,570	1.17%
Glendale	13,519	12,056	1,108,918	1.22%
Palo Alto	12,302	3,500	935,022	1.32%
SMUD	162,381	205,000	10,454,769	1.55%
Totals	**402,416**	**647,182**	**54,370,813**	**0.74%**

Sources: Savings: California Municipal Utilities Association (CMUA), *Energy Efficiency in California's Public Power Sector: A Status Report*, March 2013; Targets: CMUA, *Establishing Energy Efficiency Targets: A Public Power Response to AB 2021 Final Update, October 2007; Retail Sales: Energy Information Administration (EIA) Form 861, August 15, 2013 (preliminary) (revised November 27, 2012) on-line posting, http://www.eia.gov/electricity/data/eia861/*

Additional References:

For more information on IOU energy savings goals, see the energy efficiency goals and potential studies available from the CPUC website at: http://www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/Energy+Efficiency+Goals+and+Potential+Studies.htm (last modified September 13, 2012).

For more information on the *California Energy Demand 2014-2024 Revised Forecast*, see: http://www.energy.ca.gov/2013_energypolicy/documents/.

For more information on the *2013 Building Energy Efficiency Standards*, see: http://www.energy.ca.gov/title24/2013standards/prerulemaking/background.html

For more information on Appliance Standards, see:
http://www.energy.ca.gov/appliances/

For more information on public utility energy efficiency, see:
Lewis, Kae, Che McFarlin, Cynthia Rogers, Doug Kemmer. 2011. *Achieving Cost-Effective Energy Efficiency for California, 2011-2020.* California Energy Commission, Electricity Supply Analysis Division. CEC-200-2011-007-SF. [http://www.energy.ca.gov/2011publications/CEC-200-2011-007/CEC-200-2011-007-SF.pdf]

Contacts:

- Statewide Efficiency: Nicholas Fugate, Nicholas.Fugate@energy.ca.gov
- Building Standards: Eurlyne Geiszler, Eurlyne.Geiszler@energy.ca.gov
- Appliance Standards: John Nuffer, John.Nuffer@energy.ca.gov
- Publicly-Owned Utilities: Sandra Fromm-Burns, Sandra.Fromm@energy.ca.gov

Media inquiries should be sent to the Media and Public Communications Office at (916) 654-4989, or by e-mail at mediaoffice@energy.ca.gov.

Next update:

- October 2014